

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

In re Application of:)	
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Hidetaka ITO)	ATTN: Appeal Brief - Patents
)	
Serial No.: 10/038,655)	Group Art Unit: 2154
)	
Filed: January 8, 2002)	Examiner: D. Nguyen
)	
For: SWITCHING OF PVC CONNECTION)	

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APPEAL BRIEF

This Appeal Brief is submitted in response to the final Office Action, dated May 1, 2006, in support of the Notice of Appeal, filed August 23, 2006, and the Petition for a one month extension of time and the requisite fee filed concurrently herewith.

I. **REAL PARTY IN INTEREST**

The real party in interest in this appeal is Juniper Networks, Inc.

II. **RELATED APPEALS, INTERFERENCES, AND JUDICIAL PROCEEDINGS**

Appellant is unaware of any related appeals, interferences, or judicial proceedings.

III. STATUS OF CLAIMS

Claims 1-18 are pending in this application.

Claim 3 has been finally rejected under 35 U.S.C. § 112, second paragraph, as indefinite.

Claims 1, 2, 4, 5, 7, 9-13, 15, 16, and 18 have been finally rejected under 35 U.S.C. § 102(e) as anticipated by Yamada et al. (U.S. Patent Publication No. 2003/0137933).

Claims 3, 8, and 14 have been finally rejected under 35 U.S.C. § 103(a) as unpatentable over Yamada et al. in view of Heeren et al. (U.S. Patent No. 6,311,288).

Claims 6 and 17 have been finally rejected under 35 U.S.C. § 103(a) as unpatentable over Yamada et al. in view of Nagata et al. (U.S. Patent No. 6,181,680).

Claims 1-18 are the subject of the present appeal. These claims are reproduced in the Claim Appendix of this Appeal Brief.

IV. STATUS OF AMENDMENTS

An After Final Request for Reconsideration was filed subsequent to the final Office Action. The Examiner issued an Advisory Action, dated August 2, 2006, that indicated that the After Final Request for Reconsideration would be entered upon the filing of an appeal. A Pre-Appeal Brief Request for Review was filed on August 23, 2006, which resulted in dismissal for allegedly failing to provide a concise statement of the issues.

V. SUMMARY OF CLAIMED SUBJECT MATTER

In the paragraphs that follow, a concise explanation of the independent claims and the claims reciting means-plus-function or step-plus-function language that are involved in this

appeal will be provided by referring, in parenthesis, to examples of where support can be found in the specification and drawings.

Claim 1 recites a PVC switching control method for controlling a PVC connection in a communication network (page 3, lines 11-15). The method comprises setting a plurality of PVC connections and individually corresponding controlling connections between two exchanges of the communication network (Fig. 1a, 101, 102; Fig. 1b, 103-106; page 8, lines 2-9; page 8, lines 17-25); detecting, by each of the exchanges, occurrence of or release from trouble with a PVC connection through the corresponding controlling connection (page 9, lines 5-13); and switching an operative PVC connection to another one of the PVC connections in response to a result of the detection (page 10, lines 3-10; page 10, lines 18-23).

Claim 7 recites a PVC switching control method for controlling a PVC connection in a communication network (page 3, lines 11-15). The method comprises setting a master PVC connection and a master side operation administration and maintenance (OAM) connection corresponding to the master PVC connection between a first exchange and a second exchange (Fig. 1a, 101; Fig. 1b, 103-104; page 8, lines 17-20); setting a bypassing PVC connection prepared in advance for bypassing of the master PVC connection and a bypassing side OAM connection corresponding to the bypassing PVC connection between the first and second exchanges (Fig. 1a, 102; Fig. 1b, 105-106; page 8, lines 21-25); and switching, if both of the first and second exchanges detect trouble of the master PVC connection through the master side OAM connection, the master PVC connection to the bypassing PVC connection at the first and second exchanges (page 10, lines 3-10).

Claim 11 recites a PVC switching control system for controlling a PVC connection in a

communication network (Figs. 1a and 1b; page 8, lines 2-9). The method comprises means for setting a plurality of PVC connections (Fig. 1b, 103, 105) and corresponding controlling connections (Fig. 1b, 104, 106) between first and second exchanges (Fig. 1a, 1, 4) of the communication network (page 8, lines 2-9; page 8, lines 17-25); means for detecting, by each of the first and second exchanges (Fig. 1a, 1, 4), occurrence of or release from trouble with a PVC connection (Fig. 1b, 103, 105) based on information from the corresponding controlling connection (Fig. 1b, 104, 106) (page 9, lines 5-13); and means for switching an operative PVC connection (Fig. 1b, 103, 105) to another one of the PVC connections (Fig. 1b, 103, 105) in response to a result of the detection (page 10, lines 3-10; page 10, lines 18-23).

Claim 18 recites a first exchange (Fig. 1a, 1) in a network. The first exchange (Fig. 1a, 1) comprises means for setting a master PVC connection (Fig. 1b, 103) and a master side operation administration and maintenance (OAM) connection (Fig. 1b, 104) corresponding to the master PVC connection (Fig. 1b, 103) between the first exchange (Fig. 1a, 1) and a second exchange (Fig. 1a, 4) (page 8, lines 17-20); means for setting a bypassing PVC connection (Fig. 1b, 105) prepared in advance for bypassing of the master PVC connection (Fig. 1b, 103) and a bypassing side OAM connection (Fig. 1b, 106) corresponding to the bypassing PVC connection (Fig. 1b, 105) between the first and second exchanges (Fig. 1a, 1, 4) (page 8, lines 21-25); means for detecting trouble of the master PVC connection (Fig. 1b, 103) through the master side OAM connection (Fig. 1b, 104) (page 10, lines 3-10); and means for switching the master PVC connection (Fig. 1b, 103) to the bypassing PVC connection (Fig. 1b, 105) if trouble of the master PVC connection (Fig. 1b, 103) is detected (page 9, lines 5-13; page 10, lines 3-14).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

- A. Claim 3 stands rejected under 35 U.S.C. § 112, second paragraph, as indefinite.
- B. Claims 1, 2, 4, 5, 7, 9-13, 15, 16, and 18 stand rejected under 35 U.S.C. § 102(e) as anticipated by Yamada et al.
- C. Claims 3, 8, and 14 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Yamada et al. in view of Heeren et al.
- D. Claims 6 and 17 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Yamada et al. in view of Nagata et al.

VII. ARGUMENT

A. The Rejection Under 35 U.S.C. § 112, Second Paragraph, Should be Reversed.

The initial burden of establishing a prima facie basis to deny patentability to a claimed invention is always upon the Examiner. In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In reviewing a claim for compliance with 35 U.S.C. § 112, second paragraph, the Examiner must consider the claim as a whole to determine whether the claim particularly points out and distinctly claims that which the applicant is entitled to claim as his invention. See, e.g., In re Zlet, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989).

1. Claim 3.

Claim 3 recites that, if, while the bypassing PVC connection is used, it is detected that the currently used PVC connection has been released through the corresponding controlling

connection, then each of the exchanges switches the operative PVC connection to the currently used PVC connection.

The Examiner alleged that the claim language of claim 3 is not clearly understood because claim 3 recites switching from a currently used PVC connection to the currently used PVC connection, resulting in no switching taking place. Final Office Action, paragraph 16. Appellant submits that there is no merit to this allegation.

To clarify what is recited in claim 3, it may be beneficial to first discuss claim 2 from which claim 3 depends. Claim 2 recites that if, while one of the PVC connections is used as a currently used PVC connection, it is detected from the corresponding controlling connection that trouble has occurred with the currently used PVC connection, then each of the exchanges switches the operative PVC connection to another one of the PVC connections as a bypassing PVC connection. In other words, claim 2 recites that the operative PVC connection is switched from the currently used PVC connection to the bypassing PVC connection.

Now, claim 3 recites that if, while the bypassing PVC connection is used, it is detected that the currently used PVC connection has been released through the corresponding controlling connection, then each of the exchanges switches the operative PVC connection to the currently used PVC connection. Since the operative PVC connection has been switched to the bypassing PVC connection in claim 2, claim 3 recites switching from the bypassing PVC connection to the currently used PVC connection, and not from the currently used PVC connection to the currently used PVC connection, as alleged by the Examiner.

In response to the above argument, the Examiner alleged that:

After switching over to the bypassing PVC connection, the bypassing PVC connection becomes the currently used PVC connection and the troubled PVC connection becomes

the previous used PVC connection. On the other hand, as recited in claim 3, while the bypassing PVC connection is used [i.e. which is the currently used PVC connection], it is detected that the currently used PVC connection [i.e. which is the bypassing PVC connection] has been released through the corresponding controlling connection, then each of the exchanges switches the operative PVC connection [i.e. which is the bypassing PVC connection] to the currently used PVC connection [i.e. which is the bypassing PVC connection]. So it is not clearly explain why the switching control method would switch from the bypassing PVC connection to the same bypassing PVC connection if that bypassing PVC connection has been released.

Final Office Action, paragraph 4. Appellant submits that the Examiner's allegations prove that the Examiner is incorrectly interpreting the language of claim 3.

Contrary to the Examiner's allegation, claim 3 does not recite that after switching over to the bypassing PVC connection, the bypassing PVC connection becomes the currently used PVC connection and the troubled PVC connection becomes the previous used PVC connection. Instead, after switching over to the bypassing PVC connection, the bypassing PVC connection nominally remains the bypassing PVC connection and the currently used PVC connection nominally remains the currently used PVC connection. No switching of nomenclature occurs in claim 2 or 3. Instead, the operative PVC connection switches from the currently used PVC connection to the bypassing PVC connection when trouble has occurred with the currently used PVC connection (claim 2), and when the currently used PVC connection has been released, the operative connection is switched from the bypassing PVC connection back to the currently used PVC connection (claim 3). Therefore, Appellant submits that claim 3 appropriately defines the switching operation with regard to the currently used and bypassing PVC connections recited therein.

For at least these reasons, it is respectfully submitted that claim 3 is definite under 35 U.S.C. § 112, second paragraph. Reversal of the rejection of claim 3 is respectfully requested.

B. The Rejection Under 35 U.S.C. § 102(e) Over Yamada et al. (U.S. Patent Publication No. 2003/0137933) Should be Reversed.

The initial burden of establishing a prima facie basis to deny patentability to a claimed invention is always upon the Examiner. In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). For a proper rejection under 35 U.S.C. § 102, each and every element as set forth in the claim must be found in a single prior art reference. Verdegaal Bros. v. Union Oil Co. of California, 814 F.2d 628, 2 USPQ2d 1051 (Fed. Cir. 1987). Prior legal precedent requires that the identical invention be shown in as complete detail as is contained in the claim. Richardson v. Suzuki Motor Co., 868 F.2d 1226, 9 USPQ2d 1913 (Fed. Cir. 1989).

1. Claims 1 and 2.

Independent claim 1 is directed to a PVC switching control method for controlling a PVC connection in a communication network. The method comprises setting a plurality of PVC connections and individually corresponding controlling connections between two exchanges of the communication network; detecting, by each of the exchanges, occurrence of or release from trouble with a PVC connection through the corresponding controlling connection; and switching an operative PVC connection to another one of the PVC connections in response to a result of the detection.

Yamada et al. does not disclose or suggest the combination of features recited in claim 1. For example, Yamada et al. does not disclose or suggest setting a plurality of PVC connections and individually corresponding controlling connections between two exchanges of a communication network.

The Examiner alleged that Yamada et al. discloses primary connections, which allegedly correspond to a plurality of PVC connections in claim 1, and corresponding reserve relay connections, which allegedly correspond to the individually corresponding controlling connections recited in claim 1, and cited Figs. 2 and 3 and paragraphs 0009, 0042, 0046, and 0048 of Yamada et al. for support. Final Office Action, paragraph 19. Appellant submits that this is an unreasonable interpretation of the disclosure of Yamada et al.

First, Appellant notes that the Examiner alleged that the reserve relay connections described by Yamada et al. (described, for example, at paragraphs 0041-0042) allegedly correspond to the "individually corresponding controlling connections" recited in claim 1. Final Office Action, paragraph 19. Appellant submits that this is an unreasonable allegation. With this interpretation in mind, nowhere does Yamada et al. disclose or remotely suggest detecting occurrence of or release from trouble with a PVC connection through the reserve relay connections, as would be required by claim 1. When addressing this additional feature of claim 1, the Examiner alleged that the control PVCs (described, for example, at paragraph 0043), and not the reserve relay connections, correspond to the individually corresponding controlling connections recited in claim 1. Final Office Action, paragraph 19. This change in the rejection further supports Appellant's position that it is unreasonable to allege that the reserve relay connections are equivalent to the individually corresponding controlling connections, as recited in claim 1.

With the Examiner's latter interpretation in mind (i.e., that the control PVCs are allegedly equivalent to the individually controlling connections), Appellant continues to submit that Yamada et al. does not disclose or suggest setting a plurality of PVC connections and

individually corresponding controlling connections between two exchanges of a communication network, as required by claim 1.

In Fig. 2, Yamada et al. shows an example of a relay connection management table (paragraph 0046). Nowhere in connection with Fig. 2, or elsewhere, does Yamada et al. disclose or remotely suggest setting a plurality of PVC connections and individually corresponding controlling connections (which the Examiner alleged are equivalent to control PVCs) between two exchanges, as required by claim 1. In fact, none of the figures or description of Yamada et al. provides a control PVC set up for each corresponding PVC connection, as would be required by claim 1.

In Fig. 3, Yamada et al. shows two exchanges being connected via two lines X and Y and a control PVC being set up for only line X. Nowhere in connection with Fig. 3, or elsewhere, does Yamada et al. disclose or remotely suggest setting a plurality of PVC connections and individually corresponding controlling connections (which the Examiner alleged are equivalent to control PVCs) between two exchanges, as required by claim 1. In fact, none of the figures or description of Yamada et al. provides a control PVC set up for each corresponding PVC connection, as would be required by claim 1.

In paragraph 0009, Yamada et al. discloses:

According to the present invention, there is provided a line backup method comprising the steps of: setting up a permanent virtual connection on a line connecting between a first exchange unit and a second exchange unit; performing periodic communication between the first exchange unit and the second exchange unit using the permanent virtual connection; detecting a failure of the line by monitoring the periodic communication at each of the first and second exchange units; and switching a connection on the line, at each of the first and second exchange units, to a reserve connection not using the same line, in the event that a failure of the line is detected.

In this section, Yamada et al. discloses setting up a PVC connection on a line connecting two exchange units and detecting a failure on the line by monitoring periodic communication.

Nowhere in this section, or elsewhere, does Yamada et al. disclose or suggest setting a plurality of PVC connections and individually corresponding controlling connections (which the Examiner alleged are equivalent to control PVCs) between two exchanges, as required by claim

1.

In paragraph 0042, Yamada et al. discloses:

In the exchange unit A, reference character A1 is a periodic communication processing block which performs periodic communication with the exchange unit B using the control PVC, A2 is a line failure detection block which determines that a line failure has occurred when the information being communicated is interrupted, and A3 is a relay connection switchover processing block which, when a line failure is detected, retrieves a relay connection accommodated on the failed line and a reserve connection corresponding to it from a relay connection management table A5, and performs the processing to cut off the affected connection and set up the corresponding reserve relay connection.

In this section, Yamada et al. discloses that periodic communication takes place on the control PVC and a line failure is determined to have occurred when the information being communicated is interrupted. Nowhere in this section, or elsewhere, does Yamada et al. disclose or suggest setting a plurality of PVC connections and individually corresponding controlling connections (which the Examiner alleged are equivalent to control PVCs) between two exchanges, as required by claim 1.

In paragraph 0046, Yamada et al. discloses:

FIG. 2 is a diagram showing an example of the configuration of the relay connection management table A5. The relay connection management table A5 is accessed by line number. For each line number, the relay connection management table A5 stores local node number 14a, remote-end node number 14b, reserve line remote-end node number 14c, reserve line number 14d, primary connection VP identifier 14e, primary connection VC identifier 14f, backup connection VP identifier 14g, backup connection VC identifier 14h, backup connection QOS 14i, backup connection usage bandwidth 14j, other backup

connection attributes 14k, other node relay flag 14l, and opposite-end line backup indicating flag 14m.

In this section, Yamada et al. describes a relay connection management table. Nowhere in this section, or elsewhere, does Yamada et al. disclose or remotely suggest setting a plurality of PVC connections and individually corresponding controlling connections (which the Examiner alleged are equivalent to control PVCs) between two exchanges, as required by claim 1.

In paragraph 0048, Yamada et al. discloses:

FIG. 4 is a diagram showing an example of the configuration of the terminating connection management table. The table stores, for each line number, local node number 16a, remote-end node number 16b, reserve line remote-end node number 16c, reserve line number 16d, primary connection VP identifier 16e, primary connection VC identifier 16f, backup connection VP identifier 16g, backup connection VC identifier 16h, backup connection QOS 16i, backup connection usage bandwidth 16j, and other alternate connection attributes 16k.

In this section, Yamada et al. describes another example of a relay connection management table. Nowhere in this section, or elsewhere, does Yamada et al. disclose or remotely suggest setting a plurality of PVC connections and individually corresponding controlling connections (which the Examiner alleged are equivalent to control PVCs) between two exchanges, as required by claim 1.

The Examiner further alleged that Yamada et al. discloses a PVC connection (as line X) and a corresponding controlling connection (as the control PVC), and shows a plurality of PVC connections and corresponding controlling connections (as lines X and Y), and cited Figs. 10 and 25 of Yamada et al. for support. Final Office Action, paragraph 6. Appellant disagrees.

In Fig. 10, Yamada et al. shows two lines connecting exchange A and exchange B, one line connecting exchange A and exchange C, one line connecting exchange A and exchange D, two lines connecting exchange B and exchange C, and one line connecting exchange D and exchange

C. Claim 1 recites setting a plurality of PVC connections and individually corresponding controlling connections between two exchanges of the communication network. Inasmuch as the Examiner appears to be alleging that the two lines between exchange A and exchange B, or the two lines between exchange B and exchange C are equivalent to the plurality of PVC connections and individually corresponding controlling connections, Appellant disagrees. Yamada et al. shows only a single control PVC (which the Examiner alleged is equivalent to a controlling connection) between exchange A and exchange B, and only a single control PVC between exchange B and exchange C (Fig. 10). Therefore, the Examiner's allegation with regard to Fig. 10 is without merit.

In Fig. 25, Yamada et al. shows three lines (X, Y, and Z) connecting exchange A and exchange B. Claim 1 recites setting a plurality of PVC connections and individually corresponding controlling connections between two exchanges of the communication network and switching an operative PVC connection to another one of the PVC connections in response to a result of detection of occurrence of or release from trouble. Yamada et al. discloses that line Z is the reserve line for lines X and Y and switching from line X and/or line Y to line Z (paragraphs 0152 and 0153). Yamada et al. does not show that line Z has a control PVC (which the Examiner alleged is equivalent to a controlling connection). Therefore, Yamada et al. cannot disclose or suggest setting a plurality of PVC connections and individually corresponding controlling connections between two exchanges of the communication network and switching an operative PVC connection to another one of the PVC connections in response to a result of the detection, as required by claim 1.

For at least these reasons, it is respectfully submitted that claims 1 and 2 are not

anticipated by Yamada et al. under 35 U.S.C. § 102. Reversal of the rejection of claims 1 and 2 is respectfully requested.

2. Claim 4.

Dependent claim 4 recites that the controlling connections are set by an operation administration and maintenance function.

Initially, claim 4 depends from claim 1. Claim 4 is, therefore, not anticipated by Yamada et al. for at least the reasons given with regard to claim 1.

Additionally, Yamada et al. does not disclose or suggest the combination of features recited in claim 4. The Examiner alleged that Yamada et al. discloses that controlling connections are set by an operation administration and maintenance function and cited paragraph 0006 of Yamada et al. for support. Final Office Action, paragraph 21. Appellant disagrees.

At paragraph 0006, Yamada et al. discloses:

This method, therefore, cannot handle logical failures (e.g., software failure) occurring within an exchange unit. It is also not possible to provide for voluntary switchover performed through maintenance and administration operations from a maintenance console, etc. If a connection between exchange units is to be switched manually, the only possible way is to issue a command to switch the connection from each of the maintenance consoles connected to the exchange units at both ends, and it is, therefore, not possible to switch the connection in a synchronized fashion between the exchange units.

In this section, Yamada et al. refers to a prior art technique that uses a virtual channel (VC) alarm indication signal (AIS) operation administration and maintenance (OAM) cell to detect the occurrence of a failure (see, e.g., paragraph 0005). Yamada et al. discloses disadvantages of using OAM cells to perform a switchover. Therefore, contrary to the Examiner's allegation, Yamada et al. does not disclose controlling connections that are set by an operation

administration and maintenance function, as required by claim 4, but instead teaches away from these features.

Moreover, the Examiner has provided no motivation for combining the prior art technique disclosed by Yamada et al. with the system of Yamada et al. Therefore, the Examiner has not established a proper rejection of claim 4 .

The Examiner further alleged that Yamada et al. discloses controlling connections that are set by an operation administration and maintenance function and cited Figs. 7 and 8, and paragraphs 0067 and 0074, of Yamada et al. for support. Final Office Action, paragraph 8. Appellant disagrees.

With regard to Fig. 7, Yamada et al. discloses the situation where a connection on a line connecting two exchange units is switched over to a reserve connection passing through a third exchange unit (paragraph 0056). Nowhere in connection with Fig. 7, or elsewhere, does Yamada et al. disclose or suggest controlling connections that are set by an operation administration and maintenance function.

With regard to Fig. 8, Yamada et al. discloses the situation where a connection switchover is performed manually by a command from a maintenance console (paragraph 0067). Contrary to the Examiner's allegation, a maintenance console is not equivalent to an operation administration and maintenance function. Nevertheless, even assuming, for the sake of argument, that a maintenance console can be equated to an operation administration and maintenance function (a point that Appellant does not concede), nowhere does Yamada et al. disclose or suggest controlling connections that are set by a maintenance console, as would be required by claim 4 under the Examiner's interpretation. Instead, Yamada et al. discloses that the

maintenance console issues a manual switchover request to cause a manual switchover to occur (paragraphs 0068-0073).

At paragraph 0067, Yamada et al. discloses:

FIG. 8 is a diagram for explaining the operation performed when the connection switchover described with reference to FIGS. 1 and 3 is performed manually by a command from a maintenance console. The same elements as those in FIGS. 1 and 3 are designated by the same reference characters.

In this section, Yamada et al. discloses a connection switchover that is performed manually by a command from a maintenance console. For at least the reasons given above, Yamada et al. does not disclose or suggest controlling connections that are set by an operation administration and maintenance function, as required by claim 4.

At paragraph 0074, Yamada et al. discloses:

FIG. 9 is a diagram for explaining the operation performed when the connection switchover described with reference to FIG. 6 is performed manually by a command from a maintenance console. The same elements as those in FIG. 8 are designated by the same reference characters. When a manual switchover request is issued from the maintenance console 7 connected to the exchange unit A, the information analyzing block A10 recognizes the manual switchover request and requests the information transmitting block A8 to send out the manual switchover request.

In this section, Yamada et al. discloses a connection switchover that is performed manually by a command from a maintenance console. For at least the reasons given above, Yamada et al. does not disclose or suggest controlling connections that are set by an operation administration and maintenance function, as required by claim 4.

For at least these reasons, it is respectfully submitted that claim 4 is not anticipated by Yamada et al. under 35 U.S.C. § 102. Reversal of the rejection of claim 4 is respectfully requested.

3. Claim 5.

Dependent claim 5 recites that each of the exchanges detects trouble through receipt of an alarm indication signal cell from the operation administration and maintenance function over one of the controlling connections.

Initially, claim 5 depends from claim 4. Claim 5 is, therefore, not anticipated by Yamada et al. for at least the reasons given with regard to claim 4.

Additionally, Yamada et al. does not disclose or suggest the combination of features recited in claim 5. The Examiner alleged that Yamada et al. discloses that each of the exchanges detects trouble through receipt of an alarm indication signal cell from the operation administration and maintenance function over one of the controlling connections and cited paragraph 0005 of Yamada et al. for support. Final Office Action, paragraph 22. Appellant disagrees.

At paragraph 0005, Yamada et al. discloses:

A connection-by-connection switchover control method for Virtual Channels (VCs) is disclosed in Japanese Unexamined Patent Publication No. 9-93260. However, since this method uses a VC AIS (Alarm Indication Signal) OAM cell to detect the occurrence of a failure and switch the connection, if transmission/reception of the OAM signal becomes impossible because of the failure, the switchover operation cannot be performed.

In this section, Yamada et al. discloses a prior art technique that uses a virtual channel (VC) alarm indication signal (AIS) operation administration and maintenance (OAM) cell to detect the occurrence of a failure. In paragraph 0006, Yamada et al. discloses disadvantages of using OAM cells to perform a switchover. Therefore, contrary to the Examiner's allegation, Yamada et al. does not disclose that each of the exchanges detects trouble through receipt of an alarm indication signal cell from the operation administration and maintenance function over one of the controlling connections, as required by claim 5, but instead teaches away from these features.

Moreover, the Examiner has provided no motivation for combining the prior art technique disclosed by Yamada et al. with the system of Yamada et al. Therefore, the Examiner has not established a proper rejection of claim 5.

The Examiner further alleged that Yamada et al. discloses a switchover request signal and its format and cited Fig. 5 and paragraphs 0052 and 0059 of Yamada et al. for support. Final Office Action, paragraph 10. Appellant submits that Yamada et al. does not disclose or suggest that each of the exchanges detects trouble through receipt of an alarm indication signal cell from the operation administration and maintenance function over one of the controlling connections, as required by claim 5.

With regard to Fig. 5, at paragraph 0052, Yamada et al. discloses:

FIG. 5 is a diagram showing an example of the communication information format used in the present invention. As shown, the information consists of message identifier 19a, periodic communication type 19b, automatic switchover information 19c, manual switchover information 19d, detailed information 1 designated by 19e, and detailed information 2 designated by 19f. The message identifier 19a indicates periodic communication when it is "0", automatic switchover when it is "1", and manual switchover when it is "2". The periodic communication type information 19b indicates an acknowledgement request when it is "0", and a response notification when it is "1". The automatic switchover information 19c indicates a switchover request when it is "0", and a processing completion notification when it is "1". The manual switchover information 19d indicates a switchover request when it is "0", and a processing completion notification when it is "1". The detailed information 1 indicates the primary line number, while the detailed information 2 shows other information storage areas.

In this section, Yamada et al. discloses a communication information format that includes a message identifier, a periodic communication type, automatic switchover information, manual switchover information, detailed information 1, and detailed information 2. Nowhere in this section, or elsewhere, does Yamada et al. disclose or suggest an alarm indication signal cell, let alone that each of the exchanges detects trouble through receipt of an alarm indication signal cell

from the operation administration and maintenance function over one of the controlling connections, as required by claim 5.

At paragraph 0059, Yamada et al. discloses:

Thereupon, the information transmitting blocks A8 and C8 send a switchover request signal to the exchange unit D to which the reserve lines are connected. At the exchange unit D, an information receiving block D9 receives the information from the exchange units A and C, and passes the received information to an information analyzing block D10. The information analyzing block D10 analyzes the information and sends a connection setup request to a designated connection setup block D11.

In this section, Yamada et al. discloses processing of a switchover request signal. Nowhere in this section, or elsewhere, does Yamada et al. disclose or suggest an alarm indication signal cell, let alone that each of the exchanges detects trouble through receipt of an alarm indication signal cell from the operation administration and maintenance function over one of the controlling connections, as required by claim 5.

For at least these reasons, it is respectfully submitted that claim 5 is not anticipated by Yamada et al. under 35 U.S.C. § 102. Reversal of the rejection of claim 5 is respectfully requested.

4. Claims 7, 9, 10, and 18.

Independent claim 7 is directed to a PVC switching control method for controlling a PVC connection in a communication network. The method comprises setting a master PVC connection and a master side operation administration and maintenance (OAM) connection corresponding to the master PVC connection between a first exchange and a second exchange; setting a bypassing PVC connection prepared in advance for bypassing of the master PVC connection and a bypassing side OAM connection corresponding to the bypassing PVC connection between the first and second exchanges; and switching, if both of the first and second

exchanges detect trouble of the master PVC connection through the master side OAM connection, the master PVC connection to the bypassing PVC connection at the first and second exchanges.

Yamada et al. does not disclose or suggest the combination of features recited in claim 7. For example, Yamada et al. does not disclose or suggest setting a bypassing PVC connection prepared in advance for bypassing of a master PVC connection and a bypassing side OAM connection corresponding to the bypassing PVC connection between first and second exchanges.

The Examiner alleged that Yamada et al. discloses a set of reserve line connections, which the Examiner alleged was equivalent to bypassing PVC connections and cited Figs. 2 and 4, and paragraphs 0046 and 0048 of Yamada et al. for support. Final Office Action, paragraph 23. Regardless of the merit of the Examiner's allegation, Appellant submits that the Examiner did not fully address the features of claim 7. Claim 7 recites setting a bypassing PVC connection prepared in advance for bypassing of the master PVC connection and a bypassing side OAM connection corresponding to the bypassing PVC connection between the first and second exchanges. Yamada et al. discloses nothing similar to a bypassing side OAM connection, as required by claim 7. The Examiner did not address this portion of claim 7 and, therefore, did not establish a proper case of anticipation with regard to claim 7.

In Fig. 2, Yamada et al. shows an example of a relay connection management table (paragraph 0046). Nowhere in connection with Fig. 2, or elsewhere, does Yamada et al. disclose or remotely suggest setting a bypassing PVC connection prepared in advance for bypassing of a master PVC connection and a bypassing side OAM connection corresponding to the bypassing PVC connection between first and second exchanges, as required by claim 7.

In Fig. 4, Yamada et al. shows another example of a relay connection management table. Nowhere in connection with Fig. 4, or elsewhere, does Yamada et al. disclose or remotely suggest setting a bypassing PVC connection prepared in advance for bypassing of a master PVC connection and a bypassing side OAM connection corresponding to the bypassing PVC connection between first and second exchanges, as required by claim 7.

Paragraph 0046 of Yamada et al. has been reproduced above. In this section, Yamada et al. describes a relay connection management table. Nowhere in this section, or elsewhere, does Yamada et al. disclose or remotely suggest setting a bypassing PVC connection prepared in advance for bypassing of a master PVC connection and a bypassing side OAM connection corresponding to the bypassing PVC connection between first and second exchanges, as required by claim 7.

Paragraph 0048 of Yamada et al. has been reproduced above. In this section, Yamada et al. describes another example of a relay connection management table. Nowhere in this section, or elsewhere, does Yamada et al. disclose or remotely suggest setting a bypassing PVC connection prepared in advance for bypassing of a master PVC connection and a bypassing side OAM connection corresponding to the bypassing PVC connection between first and second exchanges, as required by claim 7.

The Examiner also alleged that Yamada et al. discloses a connection management table that stores backup connection identifiers (which the Examiner equated to a bypassing PVC connection), backup connection QoS, backup connection usage bandwidth and other backup connection attributes (which the Examiner equated to a bypassing side OAM connection). Final Office Action, paragraph 12. Appellant submits that the Examiner's interpretation of Yamada et

al. is unreasonable. A backup connection quality of service (QoS), a backup connection usage bandwidth, and/or backup connection attributes cannot reasonably be equated to a bypassing OAM connection that corresponds to a bypassing PVC connection, as required by claim 7.

For at least these reasons, it is respectfully submitted that claims 7, 9, 10, and 18 not anticipated by Yamada et al. under 35 U.S.C. § 102. Reversal of the rejection of claims 7, 9, 10, and 18 is respectfully requested.

5. Claims 11 and 13.

Independent claim 11 is directed to a PVC switching control system for controlling a PVC connection in a communication network. The system comprises means for setting a plurality of PVC connections and corresponding controlling connections between first and second exchanges of the communication network; means for detecting, by each of the first and second exchanges, occurrence of or release from trouble with a PVC connection based on information from the corresponding controlling connection; and means for switching an operative PVC connection to another one of the PVC connections in response to a result of the detection.

Yamada et al. does not disclose or suggest the combination of features recited in claim 11. For example, Yamada et al. does not disclose or suggest means for setting a plurality of PVC connections and corresponding controlling connections between first and second exchanges of the communication network.

The Examiner rejected claim 11 by generally referring to the rejection of claim 1. Final Office Action, paragraph 26. Appellant traverses the rejection.

The Examiner alleged that Yamada et al. discloses primary connections, which allegedly correspond to a plurality of PVC connections in claim 11, and corresponding reserve relay

connections, which allegedly correspond to the corresponding controlling connections recited in claim 11, and cited Figs. 2 and 3 and paragraphs 0009, 0042, 0046, and 0048 of Yamada et al. for support. Final Office Action, paragraph 19. Appellant submits that this is an unreasonable interpretation of the disclosure of Yamada et al.

First, Appellant notes that the Examiner alleged that the reserve relay connections described by Yamada et al. (described, for example, at paragraphs 0041-0042) allegedly correspond to the "corresponding controlling connections" recited in claim 11. Final Office Action, paragraph 19. Appellant submits that this is an unreasonable allegation. With this interpretation in mind, nowhere does Yamada et al. disclose or remotely suggest means for detecting occurrence of or release from trouble with a PVC connection based on information from the reserve relay connections, as would be required by claim 11. When addressing this additional feature of claim 11, the Examiner alleged that the control PVCs (described, for example, at paragraph 0043), and not the reserve relay connections, correspond to the corresponding controlling connections recited in claim 11. Final Office Action, paragraph 19. This change in the rejection further supports Appellant's position that it is unreasonable to allege that the reserve relay connections are equivalent to the corresponding controlling connections, as recited in claim 11.

With the Examiner's latter interpretation in mind (i.e., that the control PVCs are allegedly equivalent to the corresponding controlling connections), Appellant continues to submit that Yamada et al. does not disclose or suggest means for setting a plurality of PVC connections and corresponding controlling connections between first and second exchanges of the communication network, as required by claim 11.

In Fig. 2, Yamada et al. shows an example of a relay connection management table (paragraph 0046). Nowhere in connection with Fig. 2, or elsewhere, does Yamada et al. disclose or remotely suggest means for setting a plurality of PVC connections and corresponding controlling connections (which the Examiner alleged are equivalent to control PVCs) between first and second exchanges of the communication network, as required by claim 11. In fact, none of the figures or description of Yamada et al. provides a control PVC set up for each corresponding PVC connection, as would be required by claim 11.

In Fig. 3, Yamada et al. shows two exchanges being connected via two lines X and Y and a control PVC being set up for only line X. Nowhere in connection with Fig. 3, or elsewhere, does Yamada et al. disclose or remotely suggest means for setting a plurality of PVC connections and corresponding controlling connections (which the Examiner alleged are equivalent to control PVCs) between first and second exchanges of the communication network, as required by claim 11. In fact, none of the figures or description of Yamada et al. provides a control PVC set up for each corresponding PVC connection, as would be required by claim 11.

Paragraph 0009 of Yamada et al. is reproduced above. In this section, Yamada et al. discloses setting up a PVC connection on a line connecting two exchange units and detecting a failure on the line by monitoring periodic communication. Nowhere in this section, or elsewhere, does Yamada et al. disclose or suggest means for setting a plurality of PVC connections and corresponding controlling connections (which the Examiner alleged are equivalent to control PVCs) between first and second exchanges of the communication network, as required by claim 11.

Paragraph 0042 of Yamada et al. is reproduced above. In this section, Yamada et al. discloses that periodic communication takes place on the control PVC and a line failure is determined to have occurred when the information being communicated is interrupted. Nowhere in this section, or elsewhere, does Yamada et al. disclose or suggest means for setting a plurality of PVC connections and corresponding controlling connections (which the Examiner alleged are equivalent to control PVCs) between first and second exchanges of the communication network, as required by claim 11.

Paragraph 0046 of Yamada et al. is reproduced above. In this section, Yamada et al. describes a relay connection management table. Nowhere in this section, or elsewhere, does Yamada et al. disclose or remotely suggest means for setting a plurality of PVC connections and corresponding controlling connections (which the Examiner alleged are equivalent to control PVCs) between first and second exchanges of the communication network, as required by claim 11.

Paragraph 0048 of Yamada et al. is reproduced above. In this section, Yamada et al. describes another example of a relay connection management table. Nowhere in this section, or elsewhere, does Yamada et al. disclose or remotely suggest means for setting a plurality of PVC connections and corresponding controlling connections (which the Examiner alleged are equivalent to control PVCs) between first and second exchanges of the communication network, as required by claim 11.

The Examiner further alleged that Yamada et al. discloses a PVC connection (as line X) and a corresponding controlling connection (as the control PVC), and shows a plurality of PVC

connections and corresponding controlling connections (as lines X and Y), and cited Figs. 10 and 25 of Yamada et al. for support. Final Office Action, paragraph 6. Appellant disagrees.

In Fig. 10, Yamada et al. shows two lines connecting exchange A and exchange B, one line connecting exchange A and exchange C, one line connecting exchange A and exchange D, two lines connecting exchange B and exchange C, and one line connecting exchange D and exchange C. Claim 11 recites means for setting a plurality of PVC connections and corresponding controlling connections between first and second exchanges of the communication network. Inasmuch as the Examiner appears to be alleging that the two lines between exchange A and exchange B, or the two lines between exchange B and exchange C are equivalent to the plurality of PVC connections and corresponding controlling connections, Appellant disagrees. Yamada et al. shows only a single control PVC (which the Examiner alleged is equivalent to a controlling connection) between exchange A and exchange B, and only a single control PVC between exchange B and exchange C (Fig. 10). Therefore, the Examiner's allegation with regard to Fig. 10 lacks merit.

In Fig. 25, Yamada et al. shows three lines (X, Y, and Z) connecting exchange A and exchange B. Claim 11 recites means for setting a plurality of PVC connections and corresponding controlling connections between first and second exchanges of the communication network and means for switching an operative PVC connection to another one of the PVC connections in response to a result of detection of occurrence of or release from trouble. Yamada et al. discloses that line Z is the reserve line for lines X and Y and switching from line X and/or line Y to line Z (paragraphs 0152 and 0153). Yamada et al. does not show that line Z has a control PVC (which the Examiner alleged is equivalent to a controlling connection).

Therefore, Yamada et al. cannot disclose or suggest means for setting a plurality of PVC connections and corresponding controlling connections between first and second exchanges of the communication network and means for switching an operative PVC connection to another one of the PVC connections in response to a result of detection of occurrence of or release from trouble, as required by claim 11.

For at least these reasons, it is respectfully submitted that claims 11 and 13 are not anticipated by Yamada et al. under 35 U.S.C. § 102. Reversal of the rejection of claims 11 and 13 is respectfully requested.

6. Claim 12.

Dependent claim 12 recites that the controlling connections include operation administration and maintenance (OAM) connections to provide one of an alarm signal or a continuity check signal.

Initially, claim 12 depends from claim 11. Claim 12 is, therefore, not anticipated by Yamada et al. for at least the reasons given with regard to claim 11.

Additionally, Yamada et al. does not disclose or suggest the combination of features recited in claim 12. The Examiner alleged that Yamada et al. discloses the feature of claim 12 and generally referred to the rejection of claims 4-6. Final Office Action, paragraph 27.

With regard to claim 4, the Examiner alleged that Yamada et al. discloses controlling connections that are set by an operation administration and maintenance function and cited paragraph 0006 of Yamada et al. for support. Final Office Action, paragraph 21. Appellant submits that Yamada et al. does not disclose or suggest controlling connections that include

OAM connections, as recited in claim 12, for at least reasons similar to reasons given with regard to claim 4.

With regard to claim 5, the Examiner alleged that Yamada et al. discloses that each of the exchanges detects trouble through receipt of an alarm indication signal cell from the operation administration and maintenance function over one of the controlling connections and cited paragraph 0005 of Yamada et al. for support. Final Office Action, paragraph 22. Appellant submits that Yamada et al. does not disclose or suggest controlling connections that include OAM connections to provide one of an alarm signal or a continuity check signal, as recited in claim 12, for at least reasons similar to reasons given with regard to claim 5.

With regard to claim 6, the Examiner admitted that Yamada et al. does not disclose or suggest that each of the exchanges detects trouble through failure to receive a continuity check cell from the operation and maintenance function over one of the controlling connections. Final Office Action, paragraph 37. Appellant agrees with the Examiner that Yamada et al. does not disclose or suggest controlling connections that include OAM connections to provide a continuity check signal, as recited in claim 12. Thus, Yamada et al. does not anticipate claim 12.

For at least these reasons, it is respectfully submitted that claim 12 is not anticipated by Yamada et al. under 35 U.S.C. § 102. Reversal of the rejection of claim 12 is respectfully requested.

7. Claim 15.

Dependent claim 15 recites that the controlling connections are set by an operation administration and maintenance (OAM) function.

Initially, claim 15 depends from claim 11. Claim 15 is, therefore, not anticipated by

Yamada et al. for at least the reasons given with regard to claim 11.

Additionally, Yamada et al. does not disclose or suggest the combination of features recited in claim 15. The Examiner alleged that Yamada et al. discloses these features and generally referred to the rejection of claim 4. Final Office Action, paragraph 29. Appellant submits that Yamada et al. does not disclose or suggest controlling connections that are set by an OAM function, as recited in claim 15, for at least reasons similar to reasons given with regard to claim 4.

For at least these reasons, it is respectfully submitted that claim 15 is not anticipated by Yamada et al. under 35 U.S.C. § 102. Reversal of the rejection of claim 15 is respectfully requested.

8. Claim 16.

Dependent claim 16 recites that each of the first and second exchanges detects trouble via receipt of an alarm indication signal cell from the OAM function over one of the controlling connections.

Initially, claim 16 depends from claim 15. Claim 16 is, therefore, not anticipated by Yamada et al. for at least the reasons given with regard to claim 15.

Additionally, Yamada et al. does not disclose or suggest the combination of features recited in claim 16. The Examiner alleged that Yamada et al. discloses these features and generally referred to the rejection of claim 5. Final Office Action, paragraph 29. Appellant submits that Yamada et al. does not disclose or suggest that each of the first and second exchanges detects trouble via receipt of an alarm indication signal cell from the OAM function

over one of the controlling connections, as recited in claim 16, for at least reasons similar to reasons given with regard to claim 5.

For at least these reasons, it is respectfully submitted that claim 16 is not anticipated by Yamada et al. under 35 U.S.C. § 102. Reversal of the rejection of claim 16 is respectfully requested.

C. The Rejection Under 35 U.S.C. § 103(a) Over Yamada et al. (U.S. Patent Application Publication No. 2003/0137933) in View of Heeren et al. (U.S. Patent No. 6,311,288) Should be Reversed.

The initial burden of establishing a prima facie basis to deny patentability to a claimed invention is always upon the Examiner. In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In rejecting a claim under 35 U.S.C. § 103, the Examiner must provide a factual basis to support the conclusion of obviousness. In re Warner, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967). Based upon the objective evidence of record, the Examiner is required to make the factual inquiries mandated by Graham v. John Deere Co., 86 S.Ct. 684, 383 U.S. 1, 148 USPQ 459 (1966). The Examiner is also required to explain how and why one having ordinary skill in the art would have been led to modify an applied reference and/or combine applied references to arrive at the claimed invention. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988).

In establishing motivation, it has been consistently held that the requisite motivation to support the conclusion of obviousness is not an abstract concept, but must stem from the prior art as a whole to impel one having ordinary skill in the art to modify a reference or combine references with a reasonable expectation of successfully achieving some particular realistic

objective. See, for example, Interconnect Planning Corp. v. Feil, 227 F.2d 1132, 227 USPQ 543 (Fed. Cir. 1985).

1. Claim 3.

Dependent claim 3 recites that if, while the bypassing PVC connection is used, it is detected that the currently used PVC connection has been released through the corresponding controlling connection, then each of the exchanges switches the operative PVC connection to the currently used PVC connection.

Initially, claim 3 depends from claim 1. The disclosure of Heeren et al. does not cure the deficiencies in the disclosure of Yamada et al. identified above with regard to claim 1. Claim 3 is, therefore, patentable over Yamada et al. and Heeren et al., whether taken alone or in any reasonable combination, for at least the reasons given with regard to claim 1.

Additionally, neither Yamada et al. nor Heeren et al., whether taken alone or in any reasonable combination, discloses or suggests the combination of features recited in claim 3.

The Examiner admitted that Yamada et al. does not disclose the features of claim 3. Final Office Action, paragraph 33. The Examiner alleged, however, that Heeren et al. discloses the features of claim 3 and cited the Abstract and column 3, lines 50-57, of Heeren et al. for support. Final Office Action, paragraph 33. Appellant disagrees.

In the Abstract, Heeren et al. discloses:

A system and method for the detection of permanent virtual circuit failures in a communication network determines and classifies failures based upon physical or logical criteria. Upon detection of a physical failure or a logical failure the virtual circuit backup logic will establish an alternate path in order to selectively reroute information avoiding the failed primary path. Once the primary path is again available, the logic of the present invention will restore the communication from the alternate path to the primary path. The virtual circuit backup logic will selectively provide an alternate path for communication traffic on a per data link connection identifier (DLCI) basis, thus enabling a single link to be backed up over multiple links.

In this section, Heeren et al. discloses that upon detection of a failure in a primary path, an alternate path will be established and when the primary path becomes available again, communication will be restored on the primary path. Nowhere in this section, or elsewhere does Heeren et al. disclose or suggest if, while the bypassing PVC connection is used, it is detected that the currently used PVC connection has been released through the corresponding controlling connection, then each of the exchanges switches the operative PVC connection to the currently used PVC connection, as required by claim 3. In other words, claim 3 recites that the currently used PVC connection is detected to have been released through the corresponding controlling connection. Heeren et al. discloses nothing similar to a corresponding controlling connection, as required by claim 3.

At column 3, lines 50-57, Heeren et al. discloses:

Therefore, it would be desirable to provide a system and method that will detect the failure of a physical link, as well as the failure of a logical link, in a frame relay network and perform backup based upon the physical failure, and furthermore, that will selectively configure the establishment of a backup circuit and restore the primary circuit based upon the particular virtual circuit failure that occurs.

Nowhere in this section, or elsewhere does Heeren et al. disclose or suggest if, while the bypassing PVC connection is used, it is detected that the currently used PVC connection has been released through the corresponding controlling connection, then each of the exchanges switches the operative PVC connection to the currently used PVC connection, as required by claim 3. Heeren et al. discloses nothing similar to a corresponding controlling connection, as required by claim 3.

The Examiner also alleged that Heeren et al. discloses a system that queries to determine whether the primary link has been restored or is otherwise again available, and the virtual circuit

backup logic determines the availability of the primary link by detecting if the primary destination circuit is in the alarm state. Final Office Action, paragraph 14. Regardless of the merit of the Examiner's allegation, Appellant submits that the Examiner has not established that Heeren et al. discloses or suggests anything remotely similar to a corresponding controlling connection, let alone if, while a bypassing PVC connection is used, it is detected that a currently used PVC connection has been released through the corresponding controlling connection, then each of the exchanges switches the operative PVC connection to the currently used PVC connection, as required by claim 3. Therefore, the Examiner has not established a prima facie case of obviousness with regard to claim 3.

For at least these reasons, it is respectfully submitted that claim 3 is patentable over Yamada et al. and Heeren et al., whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 3 is respectfully requested.

2. Claim 8.

Dependent claim 8 recites that, if, while the first and second exchanges use the bypassing PVC connection, the first and second exchanges detect a release of the master PVC connection through the master side OAM connection, each of the first and second exchanges switches the PVC connection to the master PVC connection.

Initially, claim 8 depends from claim 7. The disclosure of Heeren et al. does not cure the deficiencies in the disclosure of Yamada et al. identified above with regard to claim 7. Claim 8 is, therefore, patentable over Yamada et al. and Heeren et al., whether taken alone or in any reasonable combination, for at least the reasons given with regard to claim 7.

Additionally, neither Yamada et al. nor Heeren et al., whether taken alone or in any

reasonable combination, discloses or suggests the combination of features recited in claim 8.

The Examiner rejected claim 8 by generally referring to the rejection of claim 3. Final Office Action, paragraph 34. Appellant traverses the Examiner's rejection for at least reasons similar to reasons given with regard to claim 3.

For at least these reasons, it is respectfully submitted that claim 8 is patentable over Yamada et al. and Heeren et al., whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 8 is respectfully requested.

3. Claim 14.

Dependent claim 14 recites that, if, while the bypassing PVC connection is used, it is detected that the currently used PVC connection has been released through the corresponding controlling connection, then each of the first and second exchanges switches the operative PVC connection to the currently used PVC connection.

Initially, claim 14 depends from claim 11. The disclosure of Heeren et al. does not cure the deficiencies in the disclosure of Yamada et al. identified above with regard to claim 11. Claim 14 is, therefore, patentable over Yamada et al. and Heeren et al., whether taken alone or in any reasonable combination, for at least the reasons given with regard to claim 11.

Additionally, neither Yamada et al. nor Heeren et al., whether taken alone or in any reasonable combination, discloses or suggests the combination of features recited in claim 14.

The Examiner rejected claim 14 by generally referring to the rejection of claim 3. Final Office Action, paragraph 35. Appellant traverses the Examiner's rejection for at least reasons similar to reasons given with regard to claim 3.

For at least these reasons, it is respectfully submitted that claim 14 is patentable over

Yamada et al. and Heeren et al., whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 14 is respectfully requested.

D. The Rejection Under 35 U.S.C. § 103(a) Over Yamada et al. (U.S. Patent Application Publication No. 2003/0137933) in View of Nagata et al. (U.S. Patent No. 6,181,680) Should be Reversed.

The initial burden of establishing a prima facie basis to deny patentability to a claimed invention is always upon the Examiner. In re Oetiker, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In rejecting a claim under 35 U.S.C. § 103, the Examiner must provide a factual basis to support the conclusion of obviousness. In re Warner, 379 F.2d 1011, 154 USPQ 173 (CCPA 1967). Based upon the objective evidence of record, the Examiner is required to make the factual inquiries mandated by Graham v. John Deere Co., 86 S.Ct. 684, 383 U.S. 1, 148 USPQ 459 (1966). The Examiner is also required to explain how and why one having ordinary skill in the art would have been led to modify an applied reference and/or combine applied references to arrive at the claimed invention. Uniroyal, Inc. v. Rudkin-Wiley Corp., 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988).

In establishing motivation, it has been consistently held that the requisite motivation to support the conclusion of obviousness is not an abstract concept, but must stem from the prior art as a whole to impel one having ordinary skill in the art to modify a reference or combine references with a reasonable expectation of successfully achieving some particular realistic objective. See, for example, Interconnect Planning Corp. v. Feil, 227 F.2d 1132, 227 USPQ 543 (Fed. Cir. 1985).

1. Claim 6.

Dependent claim 6 recites that each of the exchanges detects trouble through failure to receive a continuity check cell from the operation administration and maintenance function over one of the controlling connections.

Initially, claim 6 depends from claim 4. The disclosure of Nagata et al. does not cure the deficiencies in the disclosure of Yamada et al. identified above with regard to claim 4. Claim 6 is, therefore, patentable over Yamada et al. and Nagata et al., whether taken alone or in any reasonable combination, for at least the reasons given with regard to claim 4.

For at least these reasons, it is respectfully submitted that claim 6 is patentable over Yamada et al. and Nagata et al., whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 6 is respectfully requested.

2. Claim 17.

Dependent claim 17 recites that each of the first and second exchanges detects trouble via failure to receive a continuity check cell from the OAM function over one of the controlling connections.

Initially, claim 17 depends from claim 15. The disclosure of Nagata et al. does not cure the deficiencies in the disclosure of Yamada et al. identified above with regard to claim 15. Claim 17 is, therefore, patentable over Yamada et al. and Nagata et al., whether taken alone or in any reasonable combination, for at least the reasons given with regard to claim 15.

For at least these reasons, it is respectfully submitted that claim 17 is patentable over Yamada et al. and Nagata et al., whether taken alone or in any reasonable combination, under 35 U.S.C. § 103. Reversal of the rejection of claim 17 is respectfully requested.

VIII. CONCLUSION

In view of the foregoing arguments, Appellant respectfully solicits the Honorable Board to reverse the Examiner's rejections of claims 1-18 under 35 U.S.C. §§ 112, 102, and 103.

To the extent necessary, a petition for an extension of time under 37 C.F.R. § 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1070 and please credit any excess fees to such deposit account.

Respectfully submitted,
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CLAIM APPENDIX

1. A PVC switching control method for controlling a PVC connection in a communication network, comprising:

setting a plurality of PVC connections and individually corresponding controlling connections between two exchanges of the communication network;

detecting, by each of the exchanges, occurrence of or release from trouble with a PVC connection through the corresponding controlling connection; and

switching an operative PVC connection to another one of the PVC connections in response to a result of the detection.

2. The PVC switching control method as claimed in claim 1, wherein, if, while one of the PVC connections is used as a currently used PVC connection, it is detected from the corresponding controlling connection that trouble has occurred with the currently used PVC connection, then each of the exchanges switches the operative PVC connection to another one of the PVC connections as a bypassing PVC connection.

3. The PVC switching control method as claimed in claim 2, wherein, if, while the bypassing PVC connection is used, it is detected that the currently used PVC connection has been released through the corresponding controlling connection, then each of the exchanges switches the operative PVC connection to the currently used PVC connection.

4. The PVC switching control method as claimed in claim 1, wherein the controlling

connections are set by an operation administration and maintenance function.

5. The PVC switching control method as claimed in claim 4, wherein each of the exchanges detects trouble through receipt of an alarm indication signal cell from the operation administration and maintenance function over one of the controlling connections.

6. The PVC switching control method as claimed in claim 4, wherein each of the exchanges detects trouble through failure to receive a continuity check cell from the operation administration and maintenance function over one of the controlling connections.

7. A PVC switching control method for controlling a PVC connection in a communication network, comprising:

setting a master PVC connection and a master side operation administration and maintenance (OAM) connection corresponding to the master PVC connection between a first exchange and a second exchange;

setting a bypassing PVC connection prepared in advance for bypassing of the master PVC connection and a bypassing side OAM connection corresponding to the bypassing PVC connection between the first and second exchanges; and

switching, if both of the first and second exchanges detect trouble of the master PVC connection through the master side OAM connection, the master PVC connection to the bypassing PVC connection at the first and second exchanges.

8. The PVC switching control method as claimed in claim 7, wherein, if, while the first and second exchanges use the bypassing PVC connection, the first and second exchanges detect a release of the master PVC connection through the master side OAM connection, each of the first and second exchanges switches the PVC connection to the master PVC connection.

9. The PVC switching control method as claimed in claim 7, wherein a plurality of repeating exchanges are connected on a route of the bypassing PVC connection and a connection for forming the bypassing PVC connection is set in each of the repeating exchanges.

10. The PVC switching control method as claimed in claim 9, wherein each of the first and second exchanges designates a connection set in advance and signals a cell to a neighboring one of the plurality of repeating exchanges through the designated connection.

11. A PVC switching control system for controlling a PVC connection in a communication network, comprising:

means for setting a plurality of PVC connections and corresponding controlling connections between first and second exchanges of the communication network;

means for detecting, by each of the first and second exchanges, occurrence of or release from trouble with a PVC connection based on information from the corresponding controlling connection; and

means for switching an operative PVC connection to another one of the PVC connections in response to a result of the detection.

12. The PVC switching control system of claim 11, wherein the controlling connections include operation administration and maintenance (OAM) connections to provide one of an alarm signal or a continuity check signal.

13. The PVC switching control system of claim 11, wherein, if, while one of the PVC connections is used as a currently used PVC connection, it is detected from the corresponding controlling connection that trouble has occurred with the currently used PVC connection, then each of the first and second exchanges switches the operative PVC connection to another one of the PVC connections as a bypassing PVC connection.

14. The PVC switching control system of claim 13, wherein, if, while the bypassing PVC connection is used, it is detected that the currently used PVC connection has been released through the corresponding controlling connection, then each of the first and second exchanges switches the operative PVC connection to the currently used PVC connection.

15. The PVC switching control system of claim 11, wherein the controlling connections are set by an operation administration and maintenance (OAM) function.

16. The PVC switching control system of claim 15, wherein each of the first and second exchanges detects trouble via receipt of an alarm indication signal cell from the OAM function over one of the controlling connections.

17. The PVC switching control system of claim 15, wherein each of the first and second exchanges detects trouble via failure to receive a continuity check cell from the OAM function over one of the controlling connections.

18. A first exchange in a network, comprising:

means for setting a master PVC connection and a master side operation administration and maintenance (OAM) connection corresponding to the master PVC connection between the first exchange and a second exchange;

means for setting a bypassing PVC connection prepared in advance for bypassing of the master PVC connection and a bypassing side OAM connection corresponding to the bypassing PVC connection between the first and second exchanges;

means for detecting trouble of the master PVC connection through the master side OAM connection; and

means for switching the master PVC connection to the bypassing PVC connection if trouble of the master PVC connection is detected.

EVIDENCE APPENDIX

None

RELATED PROCEEDINGS APPENDIX

None